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SERVICE MANUAL

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FORT WAYNE, INDIANA 46804

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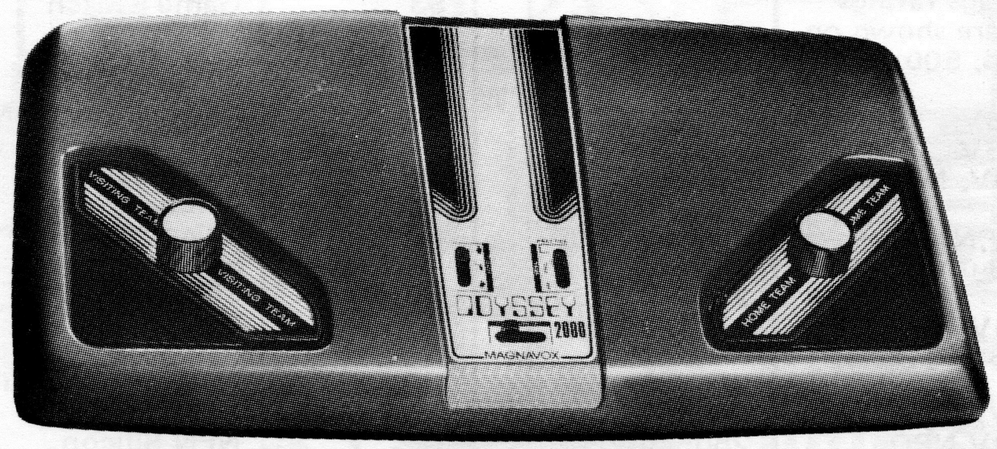
BH7510 ODYSSEY



GENERAL INFORMATION

The BH7510 can be powered by either 6 "C" Cells or an optional AC to DC 9 volt adaptor.

The BH7510 features games of Smash, Tennis, Hockey and Practice and as an extra challenge has switchable skill levels of amateur and pro which automatically adjust player size, and speed of the ball. Deflection of the ball is determined by where it strikes the player.

Automatic features include "on-screen" scoring which awards a point to the appropriate player or team each time the ball leaves the playing area. Automatic serve will return the ball into play from the side that was awarded the point. After either side has scored 15 points the ball will continue to be served but neither player will be able to return it.

During play a different audio tone is generated each time the ball hits a player, a wall, or a point is scored. No provisions are made to turn the sound on or off.

SERVICE ADJUSTMENTS

2 MHz Oscillator Adjustment

1. Connect a frequency counter to Pin 17 of IC1 and adjust C4 for 2.01 MHz ± 1%.

Channel 3 & 4 RF Oscillator Adjustment

1. Connect the Odyssey to an operating TV and defeat the TV AFT.

2. Place the TV channel selector to Channel 3, mechanically center the fine tuning, and set the Odyssey Channel select switch to Channel 3.

3. While observing the game display, adjust L3 for optimum response.

4. Change the TV and the Odyssey to Channel 4 operation.

5. While observing the game display, adjust C5 for optimum response.

6. Repeat Steps 2 thru 5 until Channel 3 and 4 game displays are equal in quanity.

TYPICAL OPERATION (TENNIS)

Connect the 300 ohm twin lead from the Antenna/Game Switch to the VHF, 300 ohm antenna terminals of a properly adjusted and operating television receiver. Connect the game cord cable from the Odyssey unit to the Antenna/Game switch and place the Game/TV Switch in the "Game" position.

Place the Channel Switch on the Odyssey to either Channel 3 or 4 and the television VHF Channel Selector to the same channel.

Set the Game Switch to the center position and Skill to the desired skill level. Move the Power/Reset Switch to the center position and fine tune the television if necessary. When play is ready to begin, move the Power/Reset Switch to the Reset Position and allow it to return to the center position. The score is now set to zero and the game begins. When either contestant reaches 15 points the players will be unable to return the ball and a new game will have to be started.

BBMPX1077
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BH7510 REPLACEMENT PARTS LIST

Note: When ordering replacement parts please specify the part number as shown in this list including Description, Chassis, and Model Number. Complete information will help expedite the order. Replacement parts may occasionally differ in part number or value from the Factory installed part. In either event the replacement part has been chosen to provide equal or improved performance.

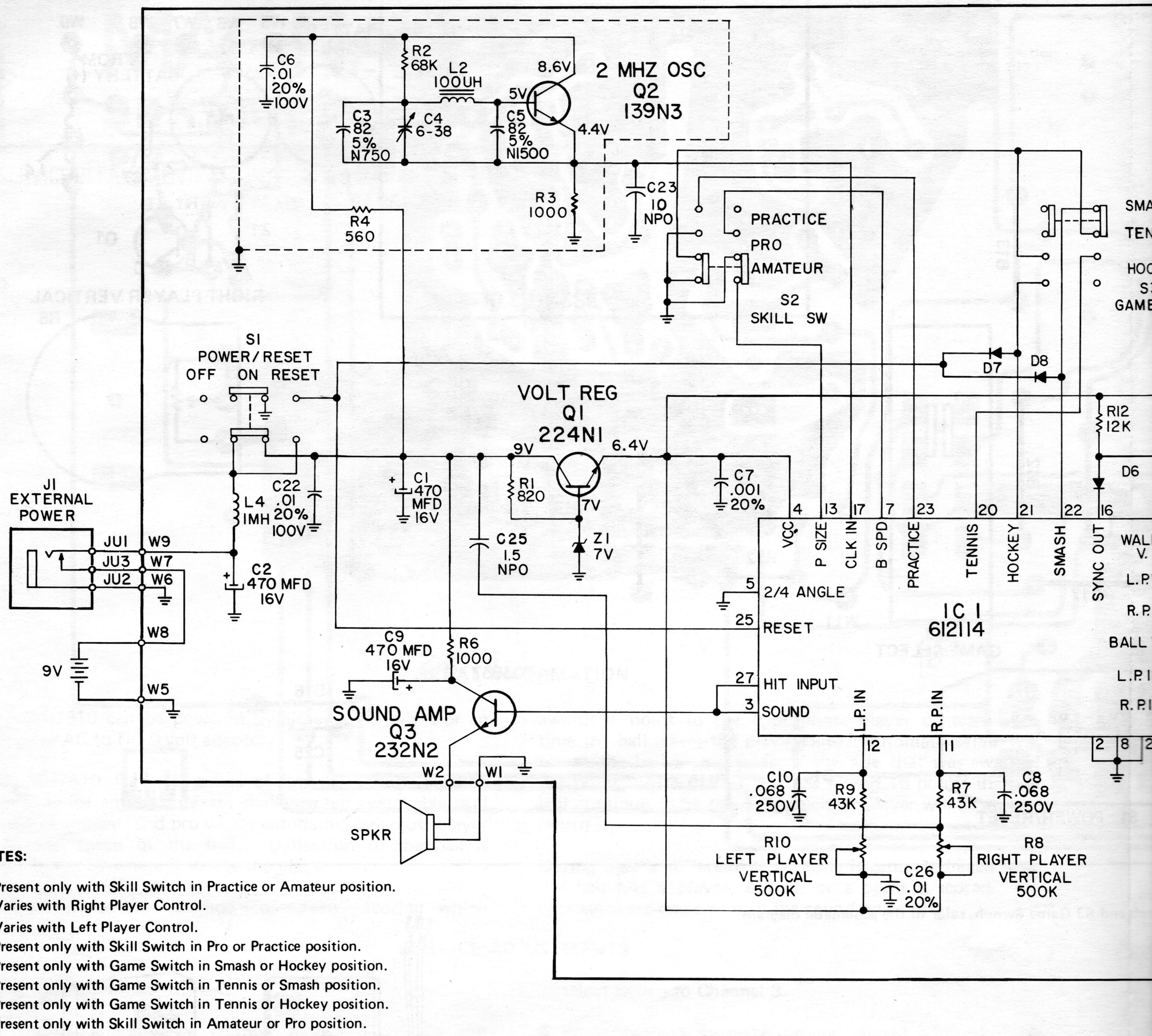
REF.	DESCRIPTION	PART NO.
	COILS	
L2	Peaking Coil, 100 uHy	361444-1015
L4	Peaking Coil, 1 mHy	361444-1029
	CAPACITORS Values, tolerances & voltage ratings for capacitors not listed are shown on the schematic, or are 10%, 500V.	
C1	Electrolytic, 470 ufd., 16V	270109-5215
C2	Electrolytic, 470 ufd., 16V	270109-5215
C3	Ceramic, 83 pf., 5%, 500V, N750	250549-8205
C4	Trimmer, 6-38 pf.	260220-2
C5	Ceramic, 82 pf.,5%,500V,N1500	250529-8205
C8	Metalized Polyester, .068 ufd.,10%, 400V	250655-6839
C9	Electrolytic, 470 ufd.,16V	270109-5215
C10	Metalized Polyester, .068 ufd.,10%, 400V	250655-6839
C23	Ceramic, 10 pf.,5%,500V,NPO	250546-1005
C24	Ceramic, 22 pf.,10%,500V,NPO	250546-2209
C25	Ceramic, 1.5 pf., ± .1 pf.,500V,NPO	250546-1596
	RESISTORS Values, tolerances & wattages for resistors not listed are shown on the schematic, or are 5%, ¼W.	

REF.	DESCRIPTION	PART NO.
	CONTROLS & SWITCHES	
R8	500K, Right Player Control	220337-3
R10	500K, Left Player Control	220337-3
S1	On-Off/Reset Switch	160546-5
S2	Skill Switch	160546-7
S3	Game Switch	160546-7
	SEMICONDUCTORS	
D2	Silicon Diode	530181-1001
D3	Silicon Diode	530181-1001
D4	Silicon Diode	530181-1001
D5	Silicon Diode	530181-1001
D6	Silicon Diode	530181-1001
D7	Silicon Diode	530181-1001
D8	Silicon Diode	530181-1001
IC1	Integrated Circuit	612114-1
Q1	NPN Silicon	610224-1
Q2	NPN Silicon	610139-3
Q3	NPN Silicon	610232-2
Z1	Zener Diode	530073-1039
J1	External Power Jack	181139-2
	Speaker 2¼"	580108-1
	Speaker Holding Strap	143856-1
	Battery Connector	181096-3

RF MODULATOR REPLACEMENT PARTS LIST

REF.	DESCRIPTION	PART NO.
	COILS	
L1	Peaking Coil, 12 uHy	361425-120
L2	Peaking Coil, 12 uHy	361425-120
L3	Oscillator Coil	361398-21
L5	Peaking Coil, 12 uHy	361425-120
L6	Filtering Coil	361558-4
	CAPACITORS Values, tolerances & voltage ratings for capacitors not listed are shown on schematic, or are 10%, 500V.	
C3	Ceramic, 10 pf.,5%,500V, NPO	250546-1005
C4	Ceramic, 10 pf.,5%,500V,NPO	250546-1005
C5	Trimmer, 2-22 pf.,100V	260220-5
C7	Ceramic, 2.2 pf., ± .25, 500V,NPO	250546-2297
C8	Ceramic, 10 pf.,5%,500V,NPO	250546-1005
C9	Ceramic, 33 pf.,5%,500V,NPO	250546-3305
C10	Ceramic, 62 pf.,5%,500V,N220	250666-6205

REF.	DESCRIPTION	PART NO.
	RESISTORS Values, tolerances, & wattages for resistors not listed are shown on the schematic, or are 5%, ¼W.	
	SWITCHES	
S1	Channel Select Switch	160556-2
	SEMICONDUCTORS	
D1	Germanium Diode	530105-1001
Q1	NPN Transistor	610139-2
	MISCELLANEOUS	
	RF Module Top Cover	733293-3
	RF Module Bottom Cover	733293-5
J1	RF Output Jack	181095-4
	RF Cable Assembly	461218-6
	—Coax Plug	180903-1
	Complete RF Module Assembly	703938-2

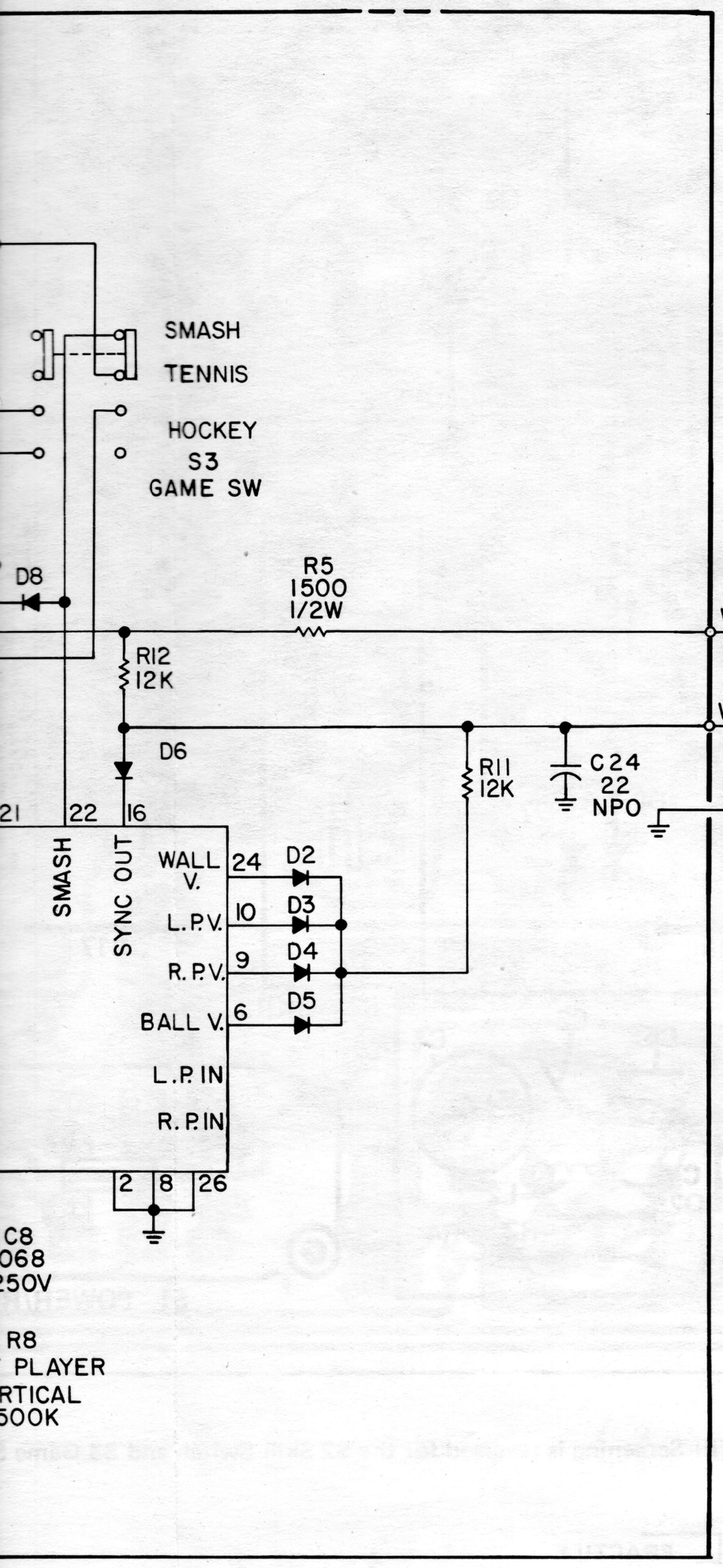


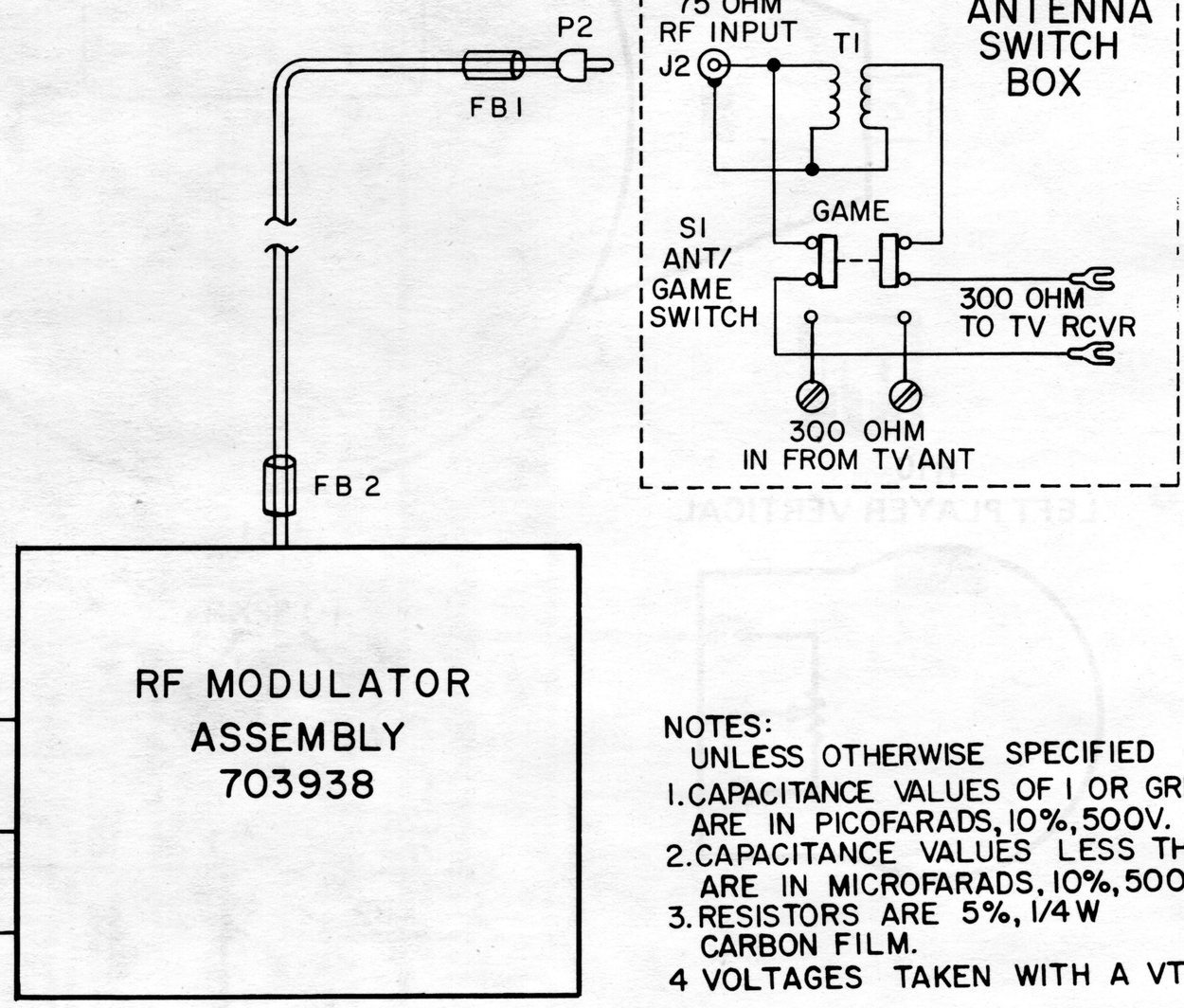
NOTES:

1. Present only with Skill Switch in Practice or Amateur position.
2. Varies with Right Player Control.
3. Varies with Left Player Control.
4. Present only with Skill Switch in Pro or Practice position.
5. Present only with Game Switch in Smash or Hockey position.
6. Present only with Game Switch in Tennis or Smash position.
7. Present only with Game Switch in Tennis or Hockey position.
8. Present only with Skill Switch in Amateur or Pro position.
9. Grounded momentarily when Switch S1 is pushed into Reset.

IC1 VOLTAGE CHART

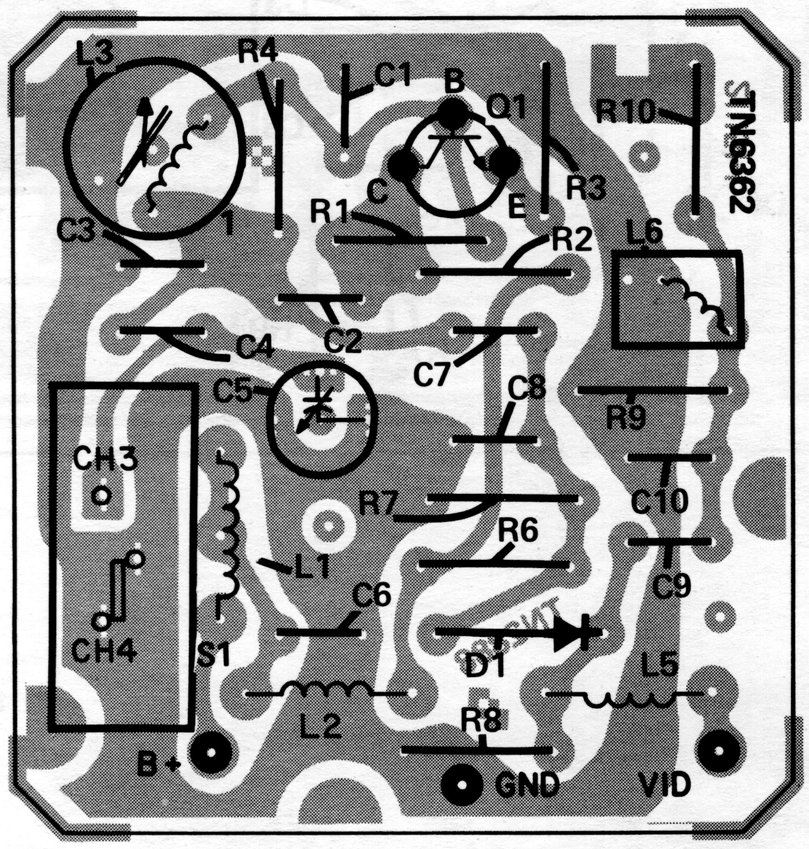
PIN	VOLTAGE	NOTE	PIN	VOLTAGE	NOTE
1	Not Used	-----	15	Not Used	-----
2	Ground	-----	16	5.8V	-----
3	Sound	-----	17	4.4V	-----
4	6.4V	-----	18	Not Used	-----
5	Ground	-----	19	Not Used	-----
6	B. Video	-----	20	6.2V	5
7	6.4V	1	21	6.2V	6
8	Ground	-----	22	6.2V	7
9	R.P. Video	-----	23	6.2V	8
10	L.P. Video	-----	24	W. Video	-----
11	1.2 to 5.4V	2	25	6.2V	9
12	1.2 to 5.4V	3	26	Ground	-----
13	6.2V	4	27	Sound	-----
14	Not Used	-----	28	Not Used	-----

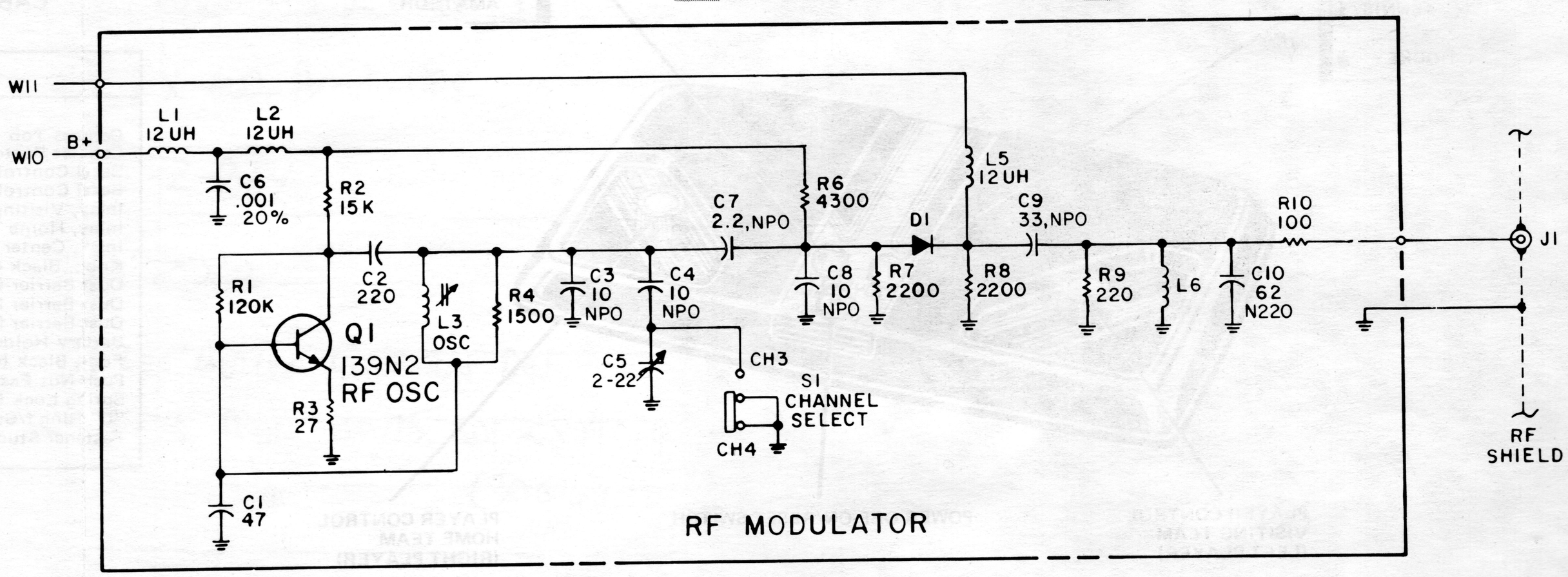




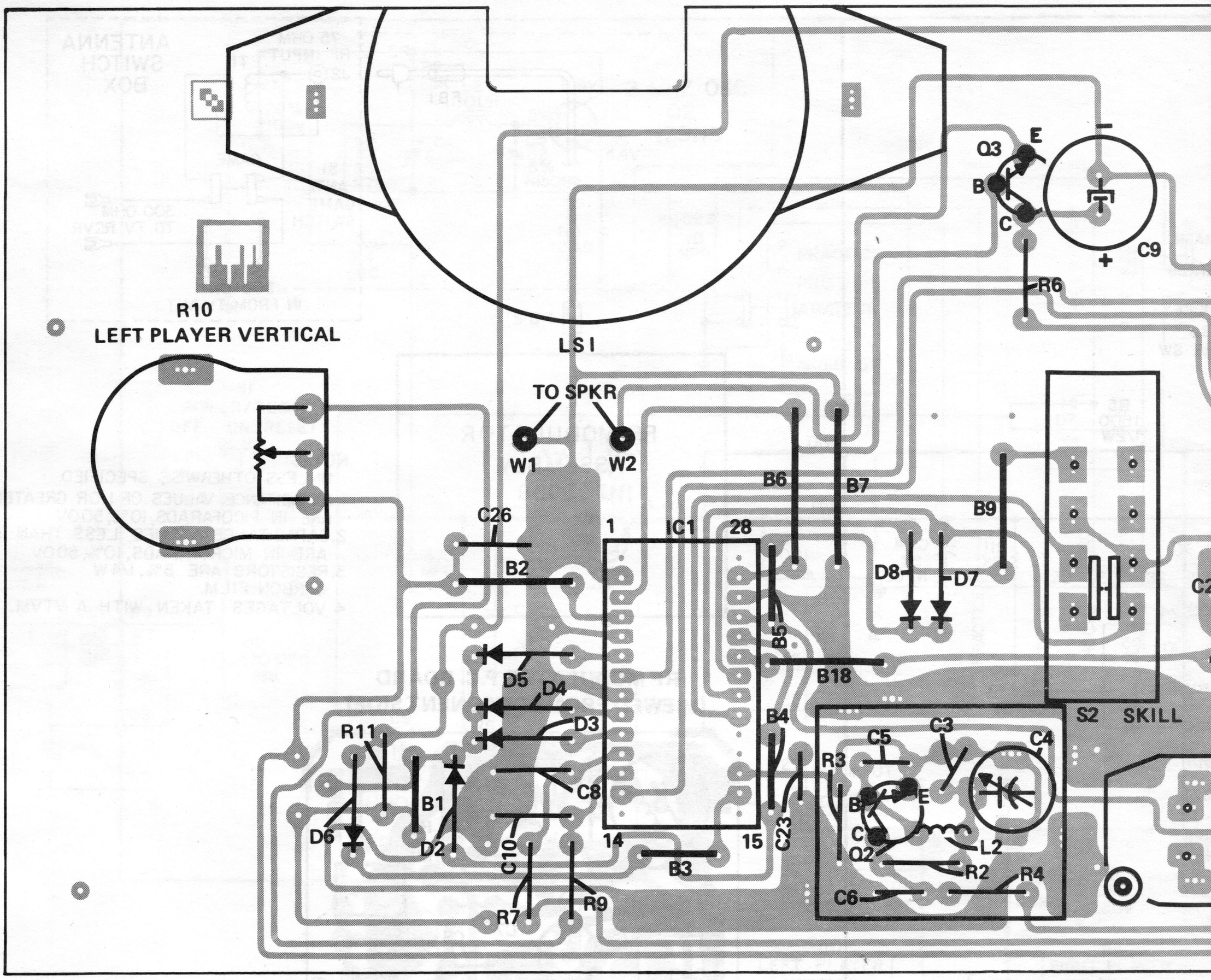
NOTES:
UNLESS OTHERWISE SPECIFIED
1. CAPACITANCE VALUES OF 1 OR GREATER ARE IN PICOFARADS, 10%, 500V.
2. CAPACITANCE VALUES LESS THAN 1 ARE IN MICROFARADS, 10%, 500V.
3. RESISTORS ARE 5%, 1/4W CARBON FILM.
4 VOLTAGES TAKEN WITH A VTVM.

RF MODULATOR P.C. BOARD (VIEWED FROM COMPONENT SIDE)

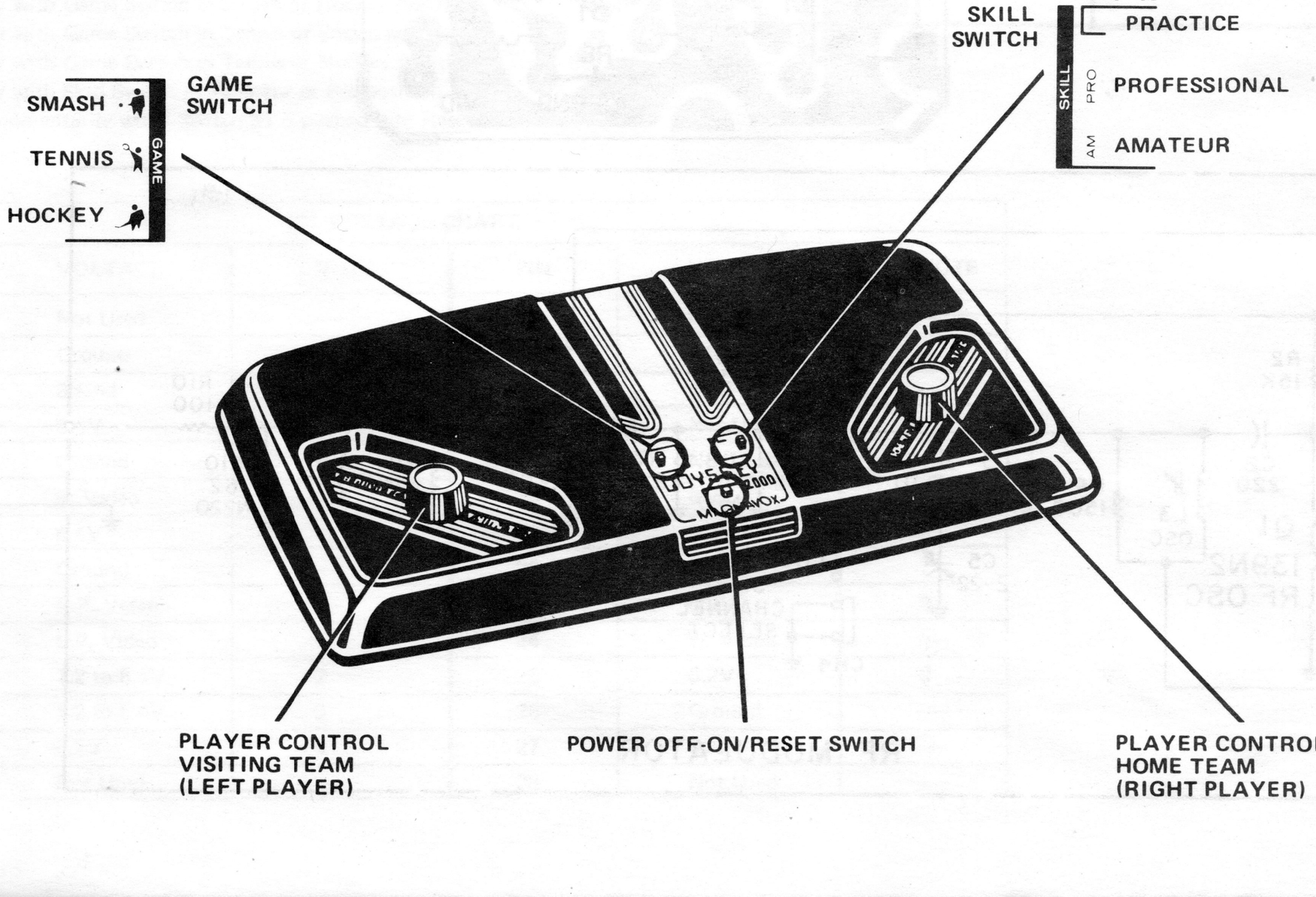




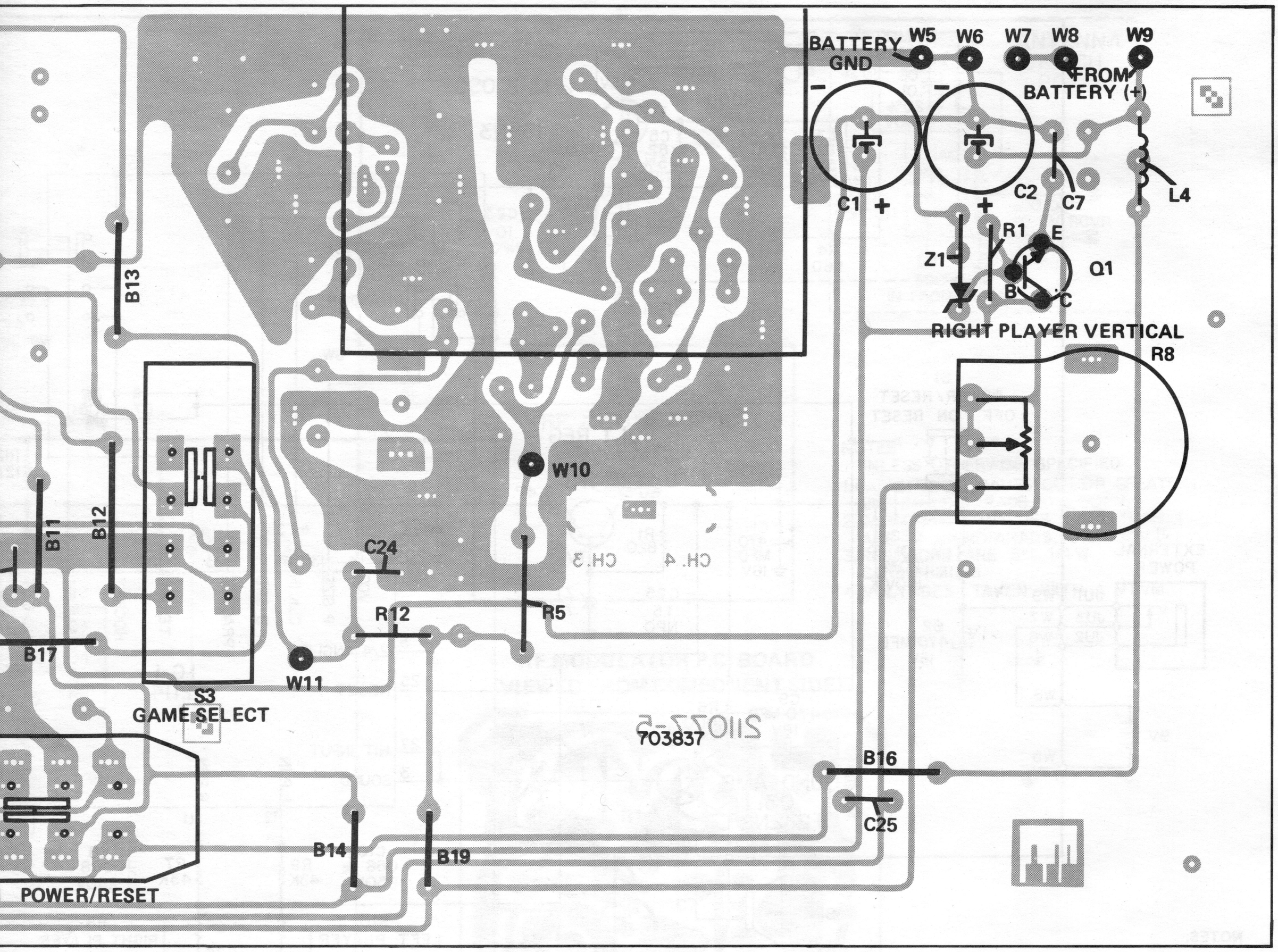
MAIN P.C. BOARD (VIEWED



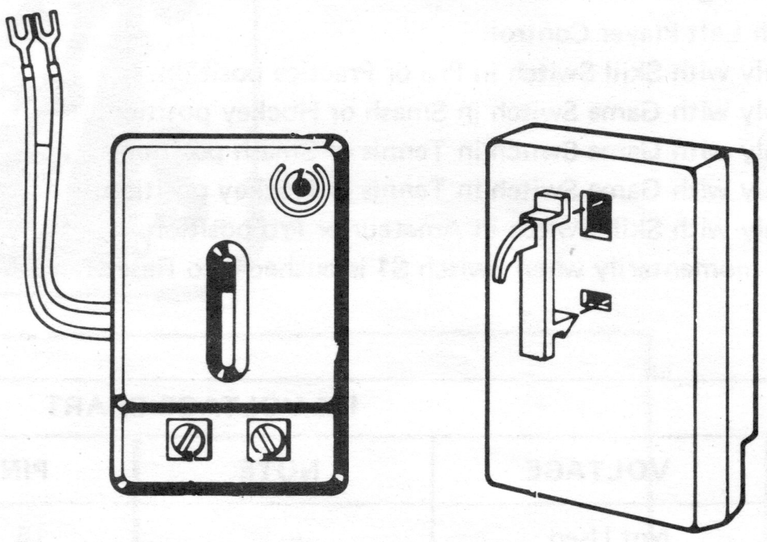
NOTE: Screening is reversed for the S2 Skill Switc



ROM COMPONENT SIDE)



and S3 Game Switch, refer to the schematic diagram.



CABINET REPLACEMENT PARTS LIST

DESCRIPTION	PART NO.
et Top	143670-7
et Bottom	143669-5
Control (Visiting Team)	143854-2
Control (Home Team)	143854-1
Visiting Team	151484-3
Home Team	151484-4
Center	151483-5
, Black (2 used)	142695-5
Barrier f/Game Switch	151449-3
Barrier f/Power Switch	151449-5
Barrier f/Skill Switch	151449-3
ry Holder	142658-1
Black (4 used)	141737-3
Nut Fastener (4 used)	103126-14
g Lock Nut	103235-1
Ring f/Stud	103082-4
ner Stud	732953-2

ANTENNA/GAME SWITCH REPLACEMENT PARTS LIST

REF.	DESCRIPTION	PART NO.
T1	Antenna Balun	361108-2
S1	Antenna Game Switch	160499-3
	Antenna Screw Terminal (2 used)	200495-1
	Solderless Terminal (2 used)	200517-1
J2	RF Input Socket	180902-4
	Twin Lead Cable Assembly	782237-2
	Antenna Case Front	143676-1
	Antenna Case Back	143674-1
	Plastic Hook	143719-1
	Complete Antenna/Game Sw. Assembly	701702-6